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09/900,049	07/09/2001	Keiichi Shimizu	210101US2	3900

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EXAMINER
DANIEL JR, WILLIE J

ART UNIT	PAPER NUMBER
2686	8

DATE MAILED: 04/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-14_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-14_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _09 July 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _5 and 7_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 09 July 2001 is in compliance with

   the provisions of 37 CFR 1.97 and is being considered by the examiner.

2. The information disclosure statement (IDS) submitted on 09 February 2004 is in compliance

   with the provisions of 37 CFR 1.97 and is being considered by the examiner.

Drawings

3. The drawings are objected to because **Figs. 11-13** and **15** uses "SRNS" for "ref. RNC81-1"

   in which the specification uses "**SRNC**" as on page 29, line 22. A proposed drawing

   correction or corrected drawings are required in reply to the Office action to avoid

   abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

   a. **Figs. 17A-B** has "ref. 111-2" to denote foreign agent and specification has "ref. 112-

      1" on page 5, line 19.

   b. "**DSCP**" as on page 26, line 2 and "**SRNC**" as on page 29, line 22 are used in which

      there is no explanation for the acronym.

   Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this
> or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-10, 12-14 are rejected under 35 U.S.C. 102(a) as being anticipated by **Chen et al.**

(hereinafter Chen) (**"Some Mechanisms To Improve TCP/IP Performance Over Wireless**

and Mobile Computing Environment", **July 04, 2000**).

Regarding **Claim 1**, Chen discloses of a handoff method of performing a handoff

when mobile host (MH) which reads on the claimed "mobile terminal equipment" is moving

from a previous base station (BS1) which reads on the claimed "foreign agent" to a new base

station (BS2) which reads on the claimed "foreign agent" in a mobile IP network (see Figs. 1

and 6) said method comprising the steps of:

when starting a handoff, additionally performing a regional registration of said mobile

terminal equipment (MH) so as to doubly register said mobile terminal equipment (MH) so

that said mobile terminal equipment (MH) is associated with both said previous foreign agent

(BS1) and said new foreign agent (BS2) (see pg. 442, left column, lines 35-38,47-51; Fig. 6),

where the mobile host has an established connection registered between both base stations

during handoff;

determining whether or not an IP packet destined for said mobile terminal equipment

(MH) is of real-time traffic when said mobile terminal equipment (MH) is doubly registered

(see pg. 440, left column, lines 33-48; pg. 441, left column, lines 27-28; pg. 442, left column,

lines 42-62; Fig. 6), where the real-time traffic is routed to the mobile host while registered

with both base stations;

bicasting the IP packet to both said previous foreign agent (BS1) and said new foreign

agent (BS2) if the IP packet is of real-time traffic, and buffering the IP packet if the IP packet

is of non-real-time traffic (see pg. 440, left column, lines 33-48; pg. 442, left column, line 42

- right column, line 3; pg. 444, left column, lines 4-8; Fig. 6), where packets that are the real-

time traffic are multicasted and the non-real-time traffic are buffered;

when the handoff is completed, updating the regional registration associated with said

previous foreign agent (BS1) so that said mobile terminal equipment (MH) is associated only

with said new foreign agent (BS2) (see pg. 442, left column, lines 22-24), where the mobile

host will have a current or new address which matches its point of connection to the internet.

The updating of regional registration would be inherent. ; and

when IP packets of non-real-time traffic are buffered, transferring the buffered IP packets

of non-real-time traffic to said new foreign agent (BS2) (see pg. 442, left column, lines 48-

58).

Regarding **Claim 2**, Chen discloses of the handoff method according to claim 1,

wherein in said double regional registration step, said mobile terminal equipment (MH) is

registered with a home agent, and said home agent performs said IP packet determination

step, said bicasting and buffering step, and said transferring step (see pg. 440, left column,

lines 33-48; pg. 442, left column, line 18-27,42-62; Fig. 6).

Regarding **Claim 3**, Chen discloses of the handoff method according to claim 2,

wherein said home agent determines whether or not an IP packet destined for said mobile

terminal equipment (MH) is of real-time traffic based on information on a header of the IP

packet (see pg. 441, left column, lines 25-29; pg. 442, left column, lines 20-27; Fig. 4).

Regarding **Claim 4**, Chen discloses of he handoff method according to claim 2,

wherein said home agent determines whether or not an IP packet destined for said mobile

terminal equipment (MH) is of real-time traffic based on information on an upper layer,

which is placed in a payload of the IP packet (see pg. 441, left column, lines 25-29; pg. 442,

left column, lines 20-27; Fig. 4), where the field of the packet has a packet type for real-time

packet.

Regarding **Claim 5**, Chen discloses of the handoff method according to claim 1,

wherein in said double regional registration step, said mobile terminal equipment (MH) is

registered with a gateway foreign agent, and said gateway foreign agent performs said IP

packet determination step, said bicasting and buffering step, and said transferring step (see

pg. 440, left column, lines 33-48; pg. 442, left column, line 18-27,42-62; Fig. 6), where the

mobile host is registered with a gateway foreign agent as in the case of a home agent that will

multicast and buffer packets to be transferred.

Regarding **Claim 6**, Chen discloses of the handoff method according to claim 5,

wherein said gateway foreign agent determines whether or not an IP packet destined for said

mobile terminal equipment (MH) is of real-time traffic based on information on a header of

the IP packet (see pg. 441, left column, lines 25-29; pg. 442, left column, lines 20-27; Fig. 4).

Regarding **Claim 7**, Chen discloses of the handoff method according to claim 5,

wherein said gateway foreign agent determines whether or not an IP packet destined for said

mobile terminal equipment (MH) is of real-time traffic based on information on an upper

layer, which is placed in a payload of the IP packet (see pg. 441, left column, lines 25-29; pg. 442, left column, lines 20-27; Fig. 4), where the field of the packet has a packet type for real-time packet.

Regarding **Claim 8**, Chen discloses of the handoff method according to claim 1, wherein said mobile IP network is a wireless network which reads on the claimed "cellular phone network" in accordance with Radio Access Network standards which can perform a mobile IP procedure, said mobile terminal equipment is a mobile host (MH) which reads on the claimed "cellular phone", and each of said new and-the previous foreign agents is a base station (BS1) which reads on the claimed "radio network control unit" that can give and receive an authority to control said cellular phone (MH), as a handoff, according to an SRNC relocation procedure (see pg. 439, left column, lines 16-41; pg. 442, left column, lines 13-34,47-53; Figs. 1 and 6), where the wireless network environment allows for the mobile host to communicate via a wireless link under control of base stations as the mobile host moves between cells in which the SRNC relocation procedure would be inherent.

Regarding **Claim 9**, Chen discloses of the handoff method according to claim 8, wherein said radio network control unit (BS1) piggybacks a mobile IP message onto a control message according to the SRNC relocation procedure (see pg. 442, left column, lines 29-34,47-51; Figs. 4 and 6), where a message for establishing a connection during the handoff of the mobile host from one base station to another base station in which the SRNC relocation procedure would be inherent.

Regarding **Claim 10**, Chen discloses of the handoff method according to claim 8, wherein said radio network control unit (BS2) detects a start time and end time of the handoff

according to an SRNC relocation procedure, and, when said cellular phone (MH) can

establish communication according to mobile IP, notifies said cellular phone (MH) of the

start time and end time of the handoff according to the mobile IP procedure (see pg. 442, left

column, lines 29-34,47-51; Fig. 6), where the base station (BS1) establishes a connection to

the mobile host to initiate the handing off of the mobile host to another base station (BS2) in

which upon completion or end of the handoff the mobile host will be associated with only

base station (BS2).

Regarding **Claim 12**, Chen discloses of the handoff method according to claim 8,

wherein after a plurality of radio network control units (BS1) have accommodated said

cellular phone (MH), a previous one of the plurality of radio network control units assumes

that an SRNC relocation procedure generated after a predetermined transfer of an authority to

control the cellular phone (MH) is a handoff procedure, so as to detect the start time and end

time of the handoff (see pg. 442, left column, lines 29-34,47-53; pg. 442, right column, lines

9-13; Fig. 6), where the mobile host (MH) moves from one base station (BS1) to another

base station (BS2) to have the control changed between the base stations in which the SRNC

relocation procedure would be inherent.

Regarding **Claim 13**, Chen discloses of a handoff method of performing a handoff

when mobile terminal equipment (MH) is moving from a previous foreign agent (BS1) to a

new foreign agent (BS2) in a mobile IP network (see Fig. 6), said method comprising the

steps of:

when starting a handoff, additionally performing a regional registration of said mobile

terminal equipment (MH) with a home agent so as to doubly register said mobile terminal

equipment (MH) so that said mobile terminal equipment (MH) is associated with both said

previous foreign agent (BS1) and said new foreign agent (BS2) (see pg. 442, left column,

lines 35-38,47-51; Fig. 6), where the mobile host through the home has an established

connection registered between both base stations during handoff;

allowing said home agent to determine whether or not an IP packet destined for said

mobile terminal equipment (MH) is of real-time traffic when said mobile terminal equipment

(MH) is doubly registered (see pg. 440, left column, lines 33-48; pg. 441, left column, lines

27-28; pg. 442, left column, lines 22-27,42-62; Fig. 6), where the real-time traffic is routed to

the mobile host while registered with both base stations;

allowing said home agent to bicast the IP packet to both said previous foreign agent and

said new foreign agent if the IP packet is of real-time traffic, and transferring the IP packet to

said previous foreign agent if the IP packet is of non-real-time traffic (see pg. 440, left

column, lines 33-48; pg. 442, left column, lines 22-27; pg. 442, left column, line 42 - right

column, line 3; pg. 444, left column, lines 4-8; Fig. 6), where the home agent multicast

packets that are the real-time traffic as well as buffer and transfer packets that are the non-

real-time traffic;

allowing said previous foreign agent (BS1) to buffer the IP packet of non-real-time traffic

transferred from said home agent therein (see pg. 442, left column, lines 48-58);

when the handoff is completed, if IP packets of non-real-time traffic are buffered in said

previous foreign agent (BS1), allowing said previous foreign agent (BS1) to transfer the

buffered IP packets of non-real-time traffic to said new foreign agent (BS2) (see pg. 442, left

column, lines 48-58); and

when the handoff is completed, updating the regional registration associated with said

previous foreign agent (BS1) so that said mobile terminal equipment (MH) is associated only

with said new foreign agent (BS2) (see pg. 442, left column, lines 22-24), where the mobile

host will have a current or new address which matches its point of connection to the internet.

The updating of regional registration would be inherent.

Regarding **Claim 14**, Chen discloses of an agent apparatus for transferring IP packets

to a new foreign agent (BS2) in a mobile IP network, to which mobile terminal equipment

(MH) is moving (see Fig. 6), said apparatus comprising:

a means for, upon receiving an IP packet destined for said mobile terminal equipment

(MH) when said mobile terminal equipment (MH) is doubly registered during a handoff,

determining whether or not the IP packet is of real-time traffic (see pg. 440, left column,

lines 33-48; pg. 441, left column, lines 27-28; pg. 442, left column, lines 42-62; Fig. 6),

where the real-time traffic is routed to the mobile host while registered with both base

stations via a connection;

a means for bicasting the IP packet to both said previous foreign agent (BS1) and said

new foreign agent (BS2) if the IP packet is of real-time traffic, and for buffering the IP

packet if the IP packet is of non-real-time traffic (see pg. 440, left column, lines 33-48; pg.

442, left column, line 42 - right column, line 3; pg. 444, left column, lines 4-8; Fig. 6), where

the packets that are real-time traffic are multicasted and the non-real-time traffic are buffered

via the connection of the mobile host with BS1 and BS2;

a means for, when the handoff has been completed and IP packets of non-real-time traffic

are buffered, transferring the buffered IP packets of non-real-time traffic to said new foreign

agent (BS2) (see pg. 442, left column, lines 48-58), where the mobile host is associated with

BS2 when the handoff is completed.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Chen et al.**

(hereinafter Chen) (**"Some Mechanisms To Improve TCP/IP Performance Over Wireless**

and Mobile Computing Environment", **July 04, 2000**) in view of **Boudreaux (US**

6,466,556 B1).

Regarding **Claim 11**, Chen teaches of the handoff method according to claim 8,

wherein said radio network control unit (BS1) detects a start time and end time of the handoff

(see pg. 442, left column, lines 28-33,47-53; pg. 442, right column, lines 9-13; Fig. 6), where

the mobile host (MH) is in the process of starting handover from one base station (BS1) and

another base station (BS2) and end when handoff is completed in which the mobile host is

registered to a base station. Chen fails to disclose having a SRNC relocation procedure and

cellular phone cannot establish communication. However, the examiner maintains that

having a SRNC relocation procedure and cellular phone cannot establish communication was

well known in the art, as taught by Boudreaux.

In the same field of endeavor, Boudreaux teaches having a SRNS relocation which

reads on the claimed "SRNC relocation" procedure and user equipment (140) which reads on

the claimed "cellular phone" cannot establish communication (see col. 5, lines 44-50; col. 5,

line 59 - col. 6, line 10; col. 7, lines 4-13; Figs. 3-4), where the movement of the UE (140)

operates according to SRNS relocation. The UE (140) does not have connectivity during the hard handover due to the break in the communication link in which the link is reconnected after break to another RNS to provide the UE with an established communication link.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Chen and Boudreaux to have a SRNC relocation procedure and cellular phone cannot establish communication.

The advantage of combining the teachings of Chen and Boudreaux is to keep packets flowing for as long as possible during the handover procedure either with a very small interruption or no interruption of flow (see Boudreaux col. 5, lines 15-25).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

    a. **Kondylis et al. (US 6,621,805 B1)** discloses a *Method and Apparatus for*

        Multicasting Real-Time Variable Bit-Rate Traffic In Wireless Ad-Hoc Networks.

    b. **Sen et al. (US 6,701,149 B1)** discloses the *Handoff Framework to Support Real-Time*

        Delay-Critical Services In a Next Generation Network.

    c. 3rd Generation Partnership Project; Technical Specification Group Radio Access

        Network; Manifestations of handover and SRNS Relocation (3G TR 25.932 version

        3.0.0); pp. 1-13.

    d. Banh et al., Handover Re-routing Schemes for Connection Oriented Services in

        Mobile ATM Networks, 1998.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Willie J. Daniel, Jr. whose telephone number is (703) 305-

8636. The examiner can normally be reached on 7:30-4:30.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status information

for unpublished applications is available through Private PAIR only. For more information

about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access

to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197

(toll-free).

WJD,JR/wjd,jr
19 April 2004

Marsha O Banks-Harold
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